

California Interagency Working Group on Indoor Air Quality

Meeting Notes

March 13, 2002

**Cal EPA Headquarters
1001 I Street, Sacramento**

GENERAL ANNOUNCEMENTS

SPECIAL PRESENTATION

AGENCY REPORTS ON CURRENT IAQ ACTIVITIES

American Lung Association of California
California Air Resources Board / IAQ & Personal Exposure Assessment Program
California Department of Education / School Facility and Planning Division
California Department of Health Service / Environmental Health Investigations Branch
California Department of Health Service / Indoor Air Quality Section
California Department of Health Service / Occupational Health Branch
California Department of Health Service / Tobacco Control Section
California Department of Industrial Relations (Cal/OSHA)
California Energy Commission
[Lawrence Berkeley National Laboratory / Indoor Environments Program](#)
Los Angeles Unified School District
Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group
Stanford University / Department of Statistics
U.S. EPA Region IX / Indoor Environment Team

WORKING GROUP COMMITTEES

Indoor Environmental Quality of Schools
Building Design and Operations

FUTURE MEETINGS

GENERAL ANNOUNCEMENTS

IAQ Legislation Introduced. California legislation on indoor air quality was introduced on February 21, 2002, by Assemblyman Fred Keeley. The two bills are:

- AB 2223, which would establish standards for new and remodeled schools to minimize the potential health effects from indoor exposure to air pollutants;
http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_2223&sess=CUR&house=B.
- AB 2332, which would establish an indoor air pollution prevention program, including education, community outreach, and emission standards;
http://www.leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_2332&sess=CUR&house=B.

Report on School IAQ Policy Released. In January 2002, the Environmental Law Institute prepared an excellent analysis of state policies on IAQ in schools entitled, *Healthier Schools: A Review of State Policies For Improving Indoor Air Quality*. The report can be found on the ELI web site at: <http://www.eli.org/store/rr02healthierschools.html>.

State Blueprint for Sustainable State Facilities. In December 2001, the California Sustainable Building Task Force released their report, *Building Better Buildings: A Blueprint for Sustainable State Facilities (Blueprint)*, containing recommendations for implementation of the Governor's Executive Order D-16-00. More information on the report and Task Force is included in the [Building Design and Operations](#) committee report.

Upcoming Conferences:

- The combined **7th World Congress on Environmental Health** and **51st Annual Educational Symposium** of the California Environmental Health Association will be held May 20-24, 2002, in San Diego. For conference information, see <http://www.IFEH2002.org>.
- **American Industrial Hygiene Conference & Exposition** will take place June 1-6, 2002, in San Diego. The joint meeting of AIHA and ACGIH (American Conference of Governmental Industrial Hygienist) will include exposition and training, including a Chemical-Biological Terrorism Learning Track. Conference info is available at <http://www.aiha.org/conf.html>.
- The **Ninth International Conference on Indoor Air Quality and Climate (*Indoor Air 2002*)** takes place June 30 to July 5, 2002, in Monterey, California. Started in 1978, *Indoor Air 'XX* is a triennial international indoor air conference series, which brings brought together people representing a wide range of disciplines, all working to understand and solve problems and identify opportunities associated with indoor environmental quality and climate. It is the largest multidisciplinary international conference series in the field of indoor air sciences. The 2002 event is expected to be the largest in its 24-year history, with up to 1500 participants. The conference web site is <http://www.indoorair2002.org/>.

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

- The **ISEA/ISEE 2002 Conference** will take place August 11-15, 2002, in Vancouver, British Columbia. This will be a combined annual meeting for the two sponsoring organizations: 11th International Society of Exposure Analysis (<http://iseaweb.org/>) and 14th International Society for Environmental Epidemiology (<http://www.iseepi.org/>). The conference web site is <http://www.iseepi.org/index1.htm>.

SPECIAL PRESENTATION

March 2002

Airborne Toxics Control Measure (ACTM) to Reduce Formaldehyde Emissions From Composite Wood Products

By

Jim Aguila (jaguila@arb.ca.gov),

Manager, Substance Evaluation Section, Air Quality Measures Branch, Stationary Source Division, Air Resources Board

Presentation notes can be found on-line at:

http://www.cal-iaq.org/CIWG/ACTM_Aguila_2002-03.pdf

and information on the program is posted at

<http://arbis.arb.ca.gov/toxics/compwood/compwood.htm>.

AGENCY REPORTS ON CURRENT IAQ ACTIVITIES

American Lung Association of California

<http://www.californialung.org/>

-- Bonnie Holmes-Gen (bhgen@alac.org)

Programs. About 2/3 of local lung associations in California are involved in the *EPA IAQ Tools For Schools* Program, and some are receiving grant funding from EPA. The Program has recently been named a "Best Practices" Program of the national American Lung Association, which means that additional training and materials will be available to assist local lung associations in program implementation. Local lung associations are involved in additional indoor air quality efforts such as the American Lung Association of Central California's "Healthy Homes" program. This program is designed to improve the quality of life for agriculture workers and their families through indoor air quality public education.

Legislation. The ALA-CA is sponsoring AB 2332 (Keeley), introduced in February 2002. This legislation would establish authority for the Air Resources Board to regulate indoor air quality and would require the board to set priorities and adopt indoor air pollution prevention and control measures to reduce emissions from products used indoors.

California Air Resources Board / Indoor Air Quality & Personal Exposure Assessment Program

<http://www.arb.ca.gov/research/indoor/indoor.htm>

-- Peggy Jenkins (mjenkins@arb.ca.gov)

SB25 Indoor Monitoring Study. Field work is in progress for the SB25 indoor and personal monitoring study. The lead investigator, Dr. Steve Colome from UCLA, will measure PM2.5, PM10, elemental carbon/organic carbon, VOCs, carbon monoxide, and aldehydes at three schools in SB25 communities. Schools were selected in Boyle Heights and Wilmington in the Los Angeles area and Crockett in northern California. Two weeks of sampling have been completed at both Boyle Heights and Wilmington. Sampling is currently in progress at Crockett. At each school, weekly air samples are collected in three classrooms, one outdoor site on the school ground, and one residence.

Personal monitoring is also part of this study. This component will be initiated in the next visit to each school. Selected students will wear a passive VOC badge for 48 hours and complete a health status questionnaire to determine the incidence of asthma and allergy.

Informational meetings for parents have been held at two of the schools; thus far the schools and parents have been supportive of the study. Contact: Dorothy Shimer (dshimer@arb.ca.gov)

Portable Classrooms Study. The final report on the Phase I survey of building characteristics and 10-day formaldehyde levels is being prepared, and is expected to be released at the end of March. Public workshops on the report will be scheduled for late April. The Phase II field work has also been completed, and the samples and data are being analyzed. The final report to the Legislature will be submitted in June. See also related item under DHS. Contact: Tom Phillips (tphillip@arb.ca.gov).

Residential Indoor Cooking Exposure Study. The final report on an indoor cooking study conducted for ARB by ARCADIS Geraghty & Miller was released. Results showed very high levels of particles and elevated levels of formaldehyde, nitrogen dioxide, and some other pollutants emitted during certain common cooking activities. This confirmed that cooking can contribute significantly to pollutant exposures of the occupants, especially those of the cook. ARB has recommended practical ways that people can reduce indoor pollutant exposures during cooking. The report can be ordered from ARB or found on-line:

Press release -- <http://www.arb.ca.gov/newsrel/nr122101.htm>,

Project overview - <http://www.arb.ca.gov/research/indoor/bcooking.pdf>,

Project report - <http://www.arb.ca.gov/research/indoor/cooking/cooking.htm>.

Contact: Tom Phillips (tphillip@arb.ca.gov).

Outdoor Air Quality Particulate Matter Standard. The Air Quality Advisory Committee (AQAC) met with OEHHA and ARB staff in January to consider their draft proposal for possible revision to the State Ambient Air Quality Standard for Particulate Matter (PM). PM was previously identified as the highest priority standard to be reviewed under SB25, which requires, among other things, that ARB and OEHHA review traditional pollutants for their potential impact on

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

children and other sensitive groups, and recommend changes to the standards, if needed, to assure protection of children and others. The AQAC was generally pleased with the draft document, but believed that a short-term PM_{2.5} (fine particle) standard is warranted by the existing data and needs to be included in the proposal. Staff are currently revising the draft proposal document and preparing responses to comments received on the draft, including responses to comments regarding the relationship among indoor, outdoor, and personal exposure concentrations of PM. The revised report is scheduled to be released in May, and is expected to be considered by the Air Resources Board for action at their June meeting. Contact: Peggy Jenkins mjenkins@arb.ca.gov. For more information, please visit

<http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm>.

Fresno Asthmatic Children's Environment Study, or FACES. Investigators at UC Berkeley recently completed pilot efforts for the "home intensive" portion of the pollutant monitoring effort in this ongoing study, and have begun collecting detailed pollutant data at a subset of the homes of the participants. Additionally, ARB has assembled two mobile trailers with a full suite of air monitors and samplers, which will be deployed at schools throughout Fresno for the next 14 months.

Contact: Jeff Yanosky jyanosky@arb.ca.gov. For more information see

<http://www.arb.ca.gov/research/faces/faces.htm>.

California Department of Education / School Facility and Planning Division

-- Tony Hesch (thesch@cde.ca.gov)

<http://goldmine.cde.ca.gov/facilities/>

EMF Mitigation. The SFPD has made recent progress with the proposed changes to department policy that would allow new school sites adjacent to power lines to perform a EMF mitigation plan and by doing so possibly reduce the required set back distance from power lines. Two large So. California. school districts have proposals submitted and they are being evaluated at this time.

High Performance Schools. The SFPD continues to provide input to the CHPS group for energy efficient classrooms and will continue to lobby for incorporation of best IAQ standards as part of the energy efficiency standards.

California Department of Health Service / Environmental Health Investigations

Branch -- Sandra McNeel (SMcNeel@dhs.ca.gov)

<http://www.dhs.ca.gov/ps/deodc/ehib/>

Chemical Terrorism Preparedness. EHIB personnel are currently involved in preparing materials for multiple focus areas of this grant including preparedness planning and readiness assessment, surveillance and epidemiology capacity, Health Alert Network/communications and information technology, risk communication and health information dissemination and health professional education/training. In addition, staff from DHS' EHIB and Communicable Disease Control Division are responding to the most recent request for grant applications by the Center for Disease Control and Prevention (CDC). This grant will provide supplemental funds for public health preparedness and response to biological, chemical and other forms of terrorism. (Contact: Debra Gilliss, dgilliss@dhs.ca.gov).

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

Asthma Resources. Along with DHS' Chronic Disease Branch, EHIB staff have been developing an asthma resource list that will provide information on the types of services or information available from state and local government agencies as well as community based organizations in California that serve clients with asthma. This list can be seen on the EHIB web site by going to the Topics page and selecting the bullet titled, *Asthma Services by County*. This list will provide the basis for developing a statewide asthma partnership and offering these partners a number of web-based services. (Contact: George Saunders, gsaunders@dhs.ca.gov).

Presentations. Sandy McNeel discussed health effects of fungi and other indoor allergens at the U.S. EPA-sponsored conference, *Indoor Air Quality: Asthma and Allergens*, in Fullerton, CA, January 22 & 23, 2002.

California Department of Health Service / Indoor Air Quality Section

-- Jed Waldman (JWaldman@dhs.ca.gov)

<http://www.cal-iaq.org>

BASE Study. We have began analysis of wet and dry bulk samples in the 100 building data set. An abstract entitled, "Exposure to Bioaerosols in 100 Large U.S. Office Buildings" was submitted for the ISEA/ISEE joint meeting, August 11–15, 2002.

Environmental Tobacco Smoke (ETS) Study. We are requesting a 1-year, no-cost extension from TRDRP so that we can study few more actual smoking rooms. We are planning to investigate 1 or 2 smoking rooms at out-of state locations, likely Nevada. (Contact: Leon Alevantis, Lalevant@dhs.ca.gov).

Emissions of Building Materials With High-Recycled Contents. In the CIWMB funded study to measure emissions of building materials with high recycled contents and compare them to their virgin counterparts, staff has completed Phase I of this study (materials used in portable classroom construction). We have tested a total of 19 building materials. The Phase I draft report is due to the CIWMB on March 15. We anticipate having the Phase I final report available in late spring 2002. We have started contacting manufacturers for samples to be tested in Phase II of the study. This phase focuses on materials characteristic to state office building construction. (Contact: Leon Alevantis, Lalevant@dhs.ca.gov).

Portable Classroom Study. A set of abstracts related to the PCS were submitted to be included at the ISEA/ISEE joint meeting, August 11–15, 2002.

- The California Portable Classroom Study: 1. Study Design and Mailed Survey Results
 - The California Portable Classrooms Study: 2. Formaldehyde Exposure Assessment
 - The California Portable Classroom Study: 3. Chemical and Microbiological Assessments
- Authors include Peggy Jenkins and Tom Phillips (ARB), Jed Waldman and Janet Macher (DHS) and Roy Whitmore, Andy Clayton, Mike Phillips and Gerry Akland (Research Triangle Institute). [Also see related note under ARB.](#)

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

Sierra Radon Surveys. Staff is preparing a report on Radon exposure studies recently concluding by DHS in the California Sierra Foothill region. The report will contain results of the 1999/2000 residential survey and 1999/2000 and 2000/01 elementary school surveys. (Contact: Jed Waldman)

Publications:

- A paper by Leon Alevantis, *California Program for Sustainable State Buildings Offers Enhanced IEQ, Superior Energy Saving, and Includes Other Resource Efficiency Measures* will be published in the April 2002 issue of the ASHRAE periodical *IEQ Strategies*.

Committee Work:

- Leon attended the ASHRAE 62 committee meeting on January 11-13, 2002. Among others items, the responses on Addendum AD were discussed. Leon is planning to have a proposed draft at the next committee meeting in April 2002.
- The DHS-IAQ Program recently became members of the U.S. Green Building Council. This group is the "nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work." See <http://www.usgbc.org/>.

Presentations:

- Janet Macher was a guest lecturer in UCB-SPH Professor Scott Robinson's *Case Studies in Industrial Hygiene* course (UCB PH 268B), leading a discussion of the NRC report, *The Airliner Cabin Environment and the Health of Passengers and Crew*, on March 6th.
- Leon Alevantis, along with Lynn Simon, gave a workshop on *High Performance Schools Best Practices: Selecting Green & Healthy Building Materials* at the 2002 CASH (Coalition for Adequate School Housing) Conference in Sacramento on February 27th.
- Jed Waldman presented on *Indoor Mold: New California Laws & Regulations*, in an all-day workshop on February 4th at the 2002 Public Policy Conference of the California Association of Homes and Services for the Aging in Sacramento. The other speakers in the workshop included Jeffrey Hicks (CIH with Geomatrix Consultants), Richard Craig (Senior VP with Marsh Risk & Insurance Services), and Philip Diamond (Attorney with Niesar & Diamond LLP).
- Leon Alevantis gave a talk on *Environmental Specifications for Office Furniture Systems* in the Environmentally Preferable Purchasing (EPP) session at the inaugural, joint California Water Environment Association (WEA) –Western Region Pollution Prevention Network (WRPPN) Conference on October 26, 2001, in Santa Rosa.
- Jed Waldman gave an after-dinner talk on *Indoor Molds: Dealing with the Known and the Unknown* for the North Bay chapters of the Pest Control Operators of California on September 13, 2001.

Papers Submitted to Indoor Air 2002:

- Concentrations of Airborne Bacteria in 100 U.S. Office Buildings
- Concentrations of Cat And Dust Mite Allergens in 93 U.S. Office Buildings
- How Public Agencies Address Indoor Mold Hazards in California
- Measurements and Modeling of Environmental Tobacco Smoke Leakage from a Simulated Smoking Room
- Special Environmental Requirements for a California State Office Building
- Sustainable Building Practices in California State Buildings

California Department of Health Service / Occupational Health Branch

<http://www.dhs.ca.gov/ohb/>

-- **Jim Cone** (Jcone@dhs.ca.gov), and **Liz Katz** (Ekatz@dhs.ca.gov)

Playground Surfacing Product Sickens Worker. A contractor employee was hospitalized with a severe respiratory illness after he applied a polyurethane resilient coating product to a playground. The product's active ingredient is MDI (methylene bisphenyl isocyanate) in a pre-polymerized form which has traditionally been considered safe. The monomeric forms of isocyanates are extremely hazardous; isocyanates are the leading cause of occupational asthma. In response to this incident, HESIS is investigating the under-appreciated toxicity of pre-polymeric forms of isocyanates.

Pollution Prevention: Collaborative Activities. DTSC's Office of Pollution Prevention and Technology Development is developing a pamphlet for the jewelry industry addressing environmental pollution issues. HESIS helped DTSC integrate worker health and safety and pollution prevention information in the pamphlet to help protect workers and to simplify regulatory compliance for employers in Southern California.

Less-toxic Alternative Chemicals. Cal/EPA Office of Environmental Health Hazard Assessment is preparing an environmental justice demonstration project with a community group near San Diego. HESIS provided information on less-toxic alternative chemicals for businesses such as dry cleaners and auto repair shops.

California Department of Health Service / Tobacco Control Section

-- Joanne Wellman-Benson (JWellman@dhs.ca.gov)

New Tobacco Control Law. In January 2002, AB 188 (Vargas) went into effect, prohibiting smoking a cigarette, cigar or other tobacco-related product within playgrounds and tot lots in parks. In addition, the law prohibits the disposal of cigarette butts, cigar butts or other tobacco-related waste within these areas. Violators of the law are subject to a one hundred dollar (\$100) fine. The local governing body determines enforcement of the law. . The new law added Section 104495 to the Health and Safety Code.

In order to promote this law, a mass mailing to the following groups will be distributed in February 2002: Head Start Grantees, WIC Program Directors, Police Chiefs, County Sheriffs, Parks and

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

Recreation Officials, City Managers, Mayors, Day Care Providers, and County Boards of Supervisors. Enclosed with cover letters describing the law will be a fact sheet of H.S. Code Section 104495, a copy of the chaptered legislation, and information on ordering promotional stickers and camera-ready copies of signs from their county/city tobacco control programs. In addition, a Communications Kit, developed by Rogers and Associates, was distributed to all CDHS/TCS-funded programs in December 2001. The kit described the new tobacco control laws that were signed into law in 2001, including HS Code 104495. The kit included a quick-reference summary of the law, a swiss-cheese press release for programs to submit to local media, sample letters to the editor, talking points, a fact sheet about the new law, and an order from TECC (Tobacco Education Clearinghouse of California) for camera-ready signage and promotional stickers in English and Spanish.

Enforcement Grants. The law enforcement grants awarded by CDHS/TCS represented a new effort to increase compliance with the state and local secondhand smoke and other tobacco-related laws. The awarded agencies included 4 local health departments, eight police departments, two county sheriffs offices, one fire department, and one District Attorney's office.

Updated California Smoke-free Workplace Law Brochure. When the California Smoke-free Workplace Law first went into effect in 1995, a brochure was developed to educate the public about the various provisions of the law. Since that time, the smoke-free bar provision went into effect, thereby outdating the original brochure. In 2001, another version of the brochure was developed with the assistance from the Secondhand Smoke Workgroup, an expert body convened to provide CDHS/TCS advice and technical assistance in developing campaigns and materials focusing on secondhand smoke. This brochure has been widely disseminated throughout California and to other states.

AB 13 Case Study. In 2001, a case study was written to describe the actions taken by the California Tobacco Control Program, in concert with county health departments throughout California, to prepare for the statewide ban on smoking inside bars, taverns and gaming clubs. The Case Study describes the groundwork conducted for smoke-free workplaces, the legislative chronology to achieve the statewide law, implementation strategies, public support, and the economic and public health impact. The Case Study has been a useful tool for other states as they embark on the road to smoke-free bars, and as a lesson to Californians on how to successfully implement complex and political tobacco control policies.

California Lessons in Clean Indoor Air. A companion piece to the AB 13 Case Study is *California Lessons in Clean Indoor Air*, a manual developed in May 2001. It consists of a compilation of campaign stories, implementation tools, and compliance strategies to implement local smoke-free laws. Developed by a LLA project director who interviewed 53 veterans of California's tobacco control campaigns, the manual provides an insiders' view on what is involved in working toward local clean indoor air policies.

Local Program Activities. CDHS/TCS emphasized the importance of secondhand smoke interventions in its 2001-2004 LLA Guidelines. In putting together their new comprehensive plans, LLAs were required to assess four CX community indicators related to secondhand smoke: 1) the extent of enforcement/compliance of state/local smoke-free bar and gaming law(s); 2) the extent of compliance with the state law that prohibits the use of tobacco by all students, school staff, parents and visitors in public school district-owned or leased buildings, on district grounds, and in district vehicles; 3) the proportion of homes with a smoker in the household who report their home is smoke-free; and 4) the extent of outdoor recreational facilities (e.g. fairgrounds, amusement parks, playgrounds, sport stadiums, etc.) that have policies designating a portion or all the outdoor areas as smoke-free. LLAs could also assess other secondhand smoke-related indicators if they desired.

The social norm change approach that CDHS/TCS requires of its local projects is most often operationalized through adoption and implementation of policies. This focus is clearly seen in the continuing adoption of policies related to secondhand smoke at the local level. As of July 2001, 325 local clean air ordinances had been established in California. Of those, 22 applied to outdoor areas.

Secondhand Smoke Field Poll. In January 2001, the Field Research Corporation conducted a survey of opinions Californians have regarding exposure to secondhand smoke. The survey of 1,812 adults was conducted using a random-digit-dial telephone survey process. Statewide data and select regional data were gathered for eleven outdoor and indoor environments, essentially areas not currently regulated by state law. These included building entrances, outdoor dining areas, nursing homes, playgrounds, patio dining, entertainment venues, casinos, apartment common areas, apartment units, hospitals, and campus housing. The data indicates a very high degree of public support for protection from SHS in these environments. For example, over 88% agreed that playgrounds and other child play areas should be smoke-free within a minimum of 15 feet from the edge of play areas. Approximately 90% agreed that nursing homes and other long-term health care facilities should be smoke-free. Approximately 86% agreed that hotel and motel lobbies and common areas such as swimming pools and fitness rooms should be smoke-free. The survey sample was selected to be representative of the entire state as well as for eight geographic regions. With two exceptions, the regional data sets represent the CDHS/TCS-defined geographic regions.

Secondhand Smoke Conference. On May 30-31, 2001 in San Diego, CDHS/TCS held the first national secondhand smoke (SHS) conference. The two-day event was attended by over 500 people from throughout the country and several foreign countries. The conference is a requirement in CDHS/TCS' grant with the Centers for Disease Control and Prevention to provide national tobacco control technical assistance. The conference featured sessions on: community organizing around SHS; facing, countering and surviving industry opposition; SHS policy development and advancement, both voluntary and legislative; reducing in-home SHS exposure; successful ethnic community SHS campaigns; getting the media interested in SHS; outdoor tobacco smoke issues, developing SHS educational materials; preemption; following up on the September 1999 statewide SHS conference; legal tools to enhance compliance with SHS laws; and SHS reduction strategies in rural environments.

Media Campaign. The Tobacco Education Media Campaign produced 22 television, radio, outdoor, and print ads last year to support the programs' efforts in secondhand smoke strategy both in the workplace as well and outdoor public places. Ads were produced in English, Spanish, Korean, Vietnamese, Mandarin, and Cantonese in this category. With regard to print, ads were also produced in Tagalog, Japanese, Thai, Cambodian, and Hmong languages.

California Department of Industrial Relations (Cal/OSHA)

– Bob Nakamura (bnakamura@hq.dir.ca.gov)

<http://www.dir.ca.gov/dosh/>

Airborne Contaminants: 8CCR 5155. The Division continues to review more Threshold Limit Value changes proposed by the ACGIH. The first meeting of the advisory committee was on May 4, 2001. The next meeting is tentatively set for May 3, 2002 in San Francisco at the state building headquarters. The Division coordinator is Bruce Wallace who can be reached at 415-703-5165.

Laboratory Fume Hoods: 8CCR 5154.1. The Division has convened five advisory committee meetings to evaluate two different petitions requesting the Standards Board to reduce ventilation rate requirements and establish a performance standard in place of the existing regulation that relies on face velocity measurements. The last meeting was on August 8th in San Francisco. Another draft proposal was presented and discussed by the attendees but no final proposal was adopted. The Division coordinator is Bruce Wallace who can be reached at 415-703-5165.

Heat Stress Standard. The Division has held four advisory committee meetings to review the need and issues involved in proposing a standard for heat stress. The last meeting was on February 15, 2002 in Oakland. A draft proposal was reviewed at the meeting, and revisions will be forthcoming based on the outcome of the meeting. For more information, contact Bob Barish at 415-703-5100.

Revision of the Sanitation standard, GISO 3362. HESIS proposed language to the Division to change the sanitation standard to specifically identify mold as an unsanitary condition that must be corrected by the employer. This was proposed as a clarification to the existing standard to the Cal/OSHA Standards Board on September 20th. In response to the comments that were received on the proposal, the Board asked the Division to have an advisory meeting to consider more information about the proposal. This advisory meeting was held on Tuesday, November 13th at 10 AM in the Oakland State Building. For information, contact Bob Nakamura at 415-703-5160.

The proposal considered at the meeting was as follows:

Title 8, Calif. Code of Regulations; General Industry Safety Orders: Article 9 Sanitation, §3362. General Requirements.

(f) *Every enclosed workplace and personal service room shall be equipped and maintained, insofar as is practicable, to prevent the entrance or harborage of insects, rodents or other vermin. An effective program of extermination and control shall be instituted whenever their presence is detected. When exterior water intrusion, leakage*

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

from interior water sources, or other uncontrolled accumulation of water results in mold infestations on interior building components or furnishings, the water intrusion, leakage, or accumulation shall be corrected, the mold shall be cleaned or removed, and water damaged components shall be repaired or replaced as necessary to prevent the regrowth of mold.

As a result of the discussion at the meeting, this proposal was revised and is being prepared for a 15-day public comment period that will be set by the Standards Board.

Revision of Recordkeeping requirements. In keeping with a Federal OSHA mandate, the recordkeeping requirements for injuries and illnesses in California workplaces have been revised and were adopted on January 2, 2002. This includes replacing the Log 200 with a Log 300 form and revising recording criteria, access requirements, and new recording requirements. These changes affect most of the employers in California. These changes can be viewed on-line at: <http://www.dir.ca.gov/DOSH/DoshReg/EmpRecPropReg.html>.

California Energy Commission

-- Obed Odoemelam (Oodoemel@energy.state.ca.us)

Implementation of the Governor's Executive Order D-16-00. Energy Commission staff continue as members of the State Sustainable Building Task Force.

Collaborative for High Performance Schools (CHPS). CEC staff participates in the activities of this group, which was started on the initiative of one of our Commissioners, Robert Pernell, who is the Chairman of the Board of Directors.

The U.S. Green Building Council. The Commission staff participates in the activities of the U.S. Green Building Council, which undertakes a nationwide effort to establish sustainable building criteria. Participants include state and federal agencies, manufacturers, and other interested parties. More specific information could be obtained from Gary Flamm of the Commission at 916-654 2817.

Lawrence Berkeley National Laboratory / Indoor Environments Program

-- Mike Apte (MGAPte@lbl.gov)

<http://eetd.lbl.gov/iep/iep.html>

Papers Submitted to Indoor Air 2002:

- Energy and indoor environmental quality in relocatable classrooms
- Mixing of a point-source indoor pollution: Numerical predictions and comparison with
- Experiments
- Modeling Particle Deposition on HVAC Heat Exchangers
- Do Indoor Environments in Schools Influence Student Performance? A Review of the Literature
- Building-related risk factors and work-related lower respiratory symptoms in 80 office building

Papers Submitted to Joint ISEA/ISEE Conference:

- Concentrations of Volatile Organic Compounds in New Relocatable Classrooms: Assessment of School-Day Exposures Comparing Standard and Alternative Interior Finish Materials and HVAC Systems
- Assessment of Noise Exposures in New Relocatable Classrooms with Standard and Advanced HVAC Systems

Los Angeles Unified School District

-- Gary Pons (gpons1@lausd.k12.ca.us)

LAUSD Office of Environmental Health and Safety Website. The Los Angeles Unified School District's Office of Environmental Health and Safety Website just went online. While they are still populating a number of the sections, it already has some great information. Over time, they will be adding a wide range of data and information. Of particular use are the most recent version of their *Safe School Inspection Guidebook*, the *Standard Emergency Procedures for Schools*, and *Safety Grams*. See <http://www.laschools.org/oehs/>

LAUSD IAQ Advisory Group. This Group is comprised of district staff from OEHS, Medical Services and UTLA, with staff from ALA-LAC, U.S. EPA Region IX, SCAQMD, and CARB, plus community members. The focus is to support in outreach and education on the *Tools for Schools* (TFS) and *Open Airways* (OA) programs. An outreach memorandum, with an attachment to request assistance with either TFS or OA, to was sent to all school/site administrators in February 2002. Since then, we have received 73 requests for information and/or implementation assistance for both programs. All of these requests have been forwarded to ALA-LAC to begin the outreach process.

Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group -- Richard Lam (RLam@oehha.ca.gov) <http://www.oehha.org/>

Chronic Reference Exposure Levels (RELs) for Airborne Toxicants. The Scientific Review Board reviewed a number of proposed chronic RELs and at its November 28, 2001 meeting, endorsed 12 additional chronic RELs, bringing the total number to 72. Additional RELs are currently undergoing review. The toxicants with new chronic RELs are acrylonitrile, beryllium and beryllium compounds, chloropicrin, diethanolamine, ethylene dibromide, isophorone, maleic anhydride, methyl isocyanate, 4,4'-methylene dianiline, selenium and selenium compounds, sulfuric acid, and vinyl acetate. Some of these chemicals are known or potential indoor air pollutants. Summaries are available at: http://www.oehha.ca.gov/air/chronic_rels/1201Crels.html.

East Bay Children's Respiratory Health Study. This cross-sectional study of school-aged children examines the relationship between respiratory health and exposure to traffic-related air pollutants. Ten schools in a Northern California area were selected based on their proximity to major roadways. Approximately 1600 third- and fourth-graders participated. The child's respiratory health and his/her home environment will be assessed through parental responses

(questionnaire). The parental health questionnaire data are being analyzed. Preliminary results show several factors are associated with bronchitis symptoms: parental health history of asthma, building history of water damage, and the presence of mold and pests in the home within the previous 12 months. The location of the school is associated with current physician-diagnosed asthma. The final outdoor air pollution monitoring was conducted in the Fall 2001. Preliminary results of air pollutant analysis show that only NO_x was weakly associated with an increased prevalence of bronchitis symptoms. Currently, we are planning for the neighborhood air monitoring study with the goal of exploring the spatial variability of pollutants in the neighborhoods where the study population resides. Contact person: Janice Kim www.Jkim@oehha.ca.gov

Ambient Air Quality Standards for Particulate Matter and Sulfates. The Staff of OEHHA and ARB in November 2001 released a report including quantitative risk assessments and recommendations for standards for PM₁₀ and PM_{2.5}:

- PM₁₀ Annual-average Standard: 20µg/m³.
- PM₁₀ 24-h-average Standard: 50µg/m³ (retain previous standard).
- PM_{2.5} Annual-average Standard: 12µg/m³.
- PM_{2.5} 24-h-average Standard: NO recommendation.
- Sulfate 24-h-average Standard: 25µg/m³ (retain previous standard).

Moving current levels of PM₁₀ and PM_{2.5} in California to attainment of the recommended standards was estimated to result in a reduction of 6500 cases of premature mortality per year. The corresponding estimated mean annual reductions in hospitalizations were 600 for chronic obstructive pulmonary disease (COPD), 900 for pneumonia, 1500 for cardiovascular disease, and 500 for asthma cases. Among children ages 7 – 14, attainment of the PM_{2.5} standard was estimated to result in about 209,000 less days of lower respiratory symptoms per year. The full document is available at <http://www.arb.ca.gov/research/aaqs/std-rs/std-rs.htm>.

Although CalEPA staff report did not recommend establishing a PM_{2.5} 24-h-average standard in the report, at their January 23-24, 2002, meeting, the Air Quality Advisory Committee (AQAC) directed them to do so. The proposed value for this new standard is expected to be available in March 2002.

Art and Craft Materials List. A new list of art and craft materials, which cannot be purchased or ordered for use in kindergarten and grade one through six, is now available. The “Guidelines for the Safe Use of Art and Craft Materials” has also been updated. They are available at: <http://www.oehha.ca.gov/education/art/index.html>.

Proposed Clarifying Regulations for Proposition 65. On November 2, 2001, OEHHA convened a public workshop to solicit input on a proposal in a first in a series of clarifying regulatory amendments. In an effort to continue the orderly process of considering amendments to the Proposition 65 regulations, OEHHA announces the availability of the second draft regulatory amendment package, which is available for downloading at:

http://www.oehha.ca.gov/prop65/CRNR_notices/safe_use/sudwrkshp.html.

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

A public hearing will be held on Monday, March 18, 2002, at 10:00 am (1001 I St, Sacramento). Following the public hearing OEHHA has scheduled to receive testimony on the first set of clarifying regulatory amendments.

Others items:

- A fact sheet, *Air Pollution and Children's Health*, was recently released by OEHHA and the American Lung Association, available on-line at:
http://www.oehha.ca.gov/public_info/facts/airkids.html.
- A booklet, *A Guide to Health Risk Assessment*, was published by OEHHA to provide a basic explanation of risk assessment for laypeople involved in environmental health issues, including policymakers, businesspeople, members of community groups, news reporters, and others with an interest in the potential health effects of toxic chemicals. Available for downloading at: <http://www.oehha.ca.gov/pdf/HRSguide2001.pdf>.
- Staff of OEHHA has reviewed the toxicity of PureDry, a candidate alternative solvent for dry cleaning. PureDry contains by weight 95% odorless mineral spirit, 3.6% HFE-7200 (a mixture of ethyl perfluoroisobutyl ether and ethyl perfluorobutyl ether), 0.9% FC-43 (perfluoro compounds of primarily 12 carbons), 0.3% PF-5070 (perfluoro compounds of primarily 7 carbons), and 0.2% PF-5060 (perfluoro compounds of primarily 6 carbons). Based on the reviewed of available literature, OEHHA staff are concerned about the neurotoxicity of mineral spirits and the environmental persistence of perfluorinated chemicals in the product.

Stanford University / Department of Statistics

-- Wayne Ott (wayne@stat.stanford.edu)

Data Validation for Random Component Superposition (RCS) Model. Wayne Ott sent a written request to Ethyl Corporation to obtain the personal exposure, indoor, and outdoor PM-2.5 concentration measurement and activity pattern data from the large population exposure field surveys conducted by Ethyl and Research Triangle Institute in Toronto, Canada, and Indianapolis, IN. It is hoped that these personal exposure and indoor field data can be used with the Random Component Superposition (RCS) model for particles under 2.5 micrometers (PM-2.5). That model was applied successfully to PM-10 in Riverside, CA; Toronto, Canada; and Phillipsburg, NJ, and the RCS model offers the possibility of extending the findings from one population exposure field survey to the populations of other cities.

Indoor Air 2002 Paper: Paul Switzer, Sandra McBride, and Wayne Ott submitted a research paper to Indoor Air 2002 on the *Mixing Characteristics of a Continuously Emitting Point Source in a Room*. This paper includes time delay statistics based on past indoor experiments on the times at which pollutants travel across a room (that is, their "first hit" times at a monitoring location in the room). The first hit times may permit development of a new model describing the mixing times of indoor pollutants and may help explain the error in indoor air quality models based on the mass balance equation and its assumption of uniform mixing.

U.S. EPA Region IX / Indoor Environment Team

<http://www.epa.gov/iaq/>

- Barbara Spark (spark.barbara@epamail.epa.gov)
- Bill Jones (jones.bill@epamail.epa.gov)

IAQ Tools for Schools hotline. A technical and non-technical "hotline" for questions about school IAQ and implementation of the *IAQ Tools for Schools Action Kit* program has been funded by EPA at the University of Wisconsin at Madison, College of Engineering, HVAC and Research Center. This group has run tech hotlines for ASHRAE and EPRI. This service is available both to school personnel seeking assistance about implementing the *Tools for Schools* program, and those simply seeking answers to school IAQ questions. The phone number is **866-TFSEPA1 (866-837-3721)**. We welcome assistance in getting the word out on this service. Reminder: the IAQ INFO Clearinghouse **(800) 438-4318** answers general IAQ questions and provides copies of many EPA IAQ documents and fact sheets to all stakeholders.

Indoor Air Quality Tools For Schools. We are entering a new phase in our efforts to encourage school districts to fully implement the "IAQ Tools for Schools (TfS) Action Kit program. Our training and outreach efforts, and those of our American Lung Association grantees, have resulted in widespread use of the parts of the Kit, which help maintenance and operations personnel to improve school IAQ, but implementation at the all-important school-site classroom level has been harder to achieve. We are now making significant progress in bringing together institutional support for full implementation, as noted below.

EPA Regional Administrator (R9) Tools For Schools Initiative. Our new Regional Administrator, Wayne Natri, has decided to become personally involved with our outreach efforts on TfS. He will be directly engaged with efforts in four school districts in our region, 2-3 of which will be in California (including LAUSD). Our strategy includes developing multifaceted local initiatives which include engagement by local government leaders, leadership by statewide governmental agencies and statewide school decision-maker associations, and local health and environmental entities, and community groups. We are working closely on this project with Bill Jones, R9 schools liaison, and our Public Affairs department.

Partnerships with Statewide Organizations. We are in the process of formalizing partnerships with major statewide organizations of school decision-makers: California Association of School Business Officials (CASBO), Association of California School Administrators (ACSA), and California Schools Boards Association (CSBA).

- CASBO - A joint letter encouraging implementation of IAQ TfS signed by our Regional Administrator, Wayne Natri, and the Executive Director of CASBO, Kevin Gordon, will shortly be mailed to Superintendents and Chief Business Officials in every California school district. An MOU detailing a multi-faceted CASBO/EPA partnership is in the works. We also facilitated a meeting between CASBO officials and a number of elected County School Superintendents and EPA Administrator Christine Todd Whitman and other EPA officials in Washington, DC.

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

- CSBA - CA School Boards Association officials and a number of district School Boards presidents recently met at EPA HQ with Indoor Air and Children's Health representatives to discuss EPA programs available to support local efforts to support children's environmental health. The IAQ TFS program was met with great enthusiasm, resulting in CSBA assigning a liaison to work with our Team on collaborative efforts.
- ACSA - The Association of California School Administrators is a very large organization representing not only district superintendents, but all Elementary, Middle and High School principals in the state. We met with ACSA officials (and the CSBA liaison) to describe the TFS program and discuss future collaboration. An MOU is now in development with ACSA, and we've been invited to write articles for their two publications.

EPA Healthy Schools Initiative. EPA has launched a multi-faceted schools initiative designed to bring school related programs into sharper focus and help schools put environmental issues into the broader context of their fundamental goal of teaching children. The initiative will utilize many of the principles of High Performance Schools in which planners and other key players in the school community take a "whole-buildings" approach to considering key building systems and technologies together to ensure that the impact of these systems and the building as a whole on occupant, health, comfort, and productivity is understood and optimized at each stage of a building's lifecycle. New web-based guidance on school design, construction, and renovation is now in development and will focus on ensuring superior indoor air quality within the context of energy efficiency and other issues of critical importance to schools. This guidance will be completed and online Summer 2002. A "one-stop shopping" web portal site on school environmental health issues will also be online in the summer of 2002, permitting those interested in school environmental health issues to find resources available from EPA, other Federal Agencies, States, and non-governmental organizations through a single access point.

Schools Workgroup to the Children's Health Protection Advisory Committee (CHPAC).

The CHPAC advises the EPA Administrator on Children's Health Issues and formed a schools workgroup to provide recommendations addressing how schools should be designed, built and maintained to prevent or minimize exposures and what research needs to be done. The workgroup is finalizing the letter and a final set of recommendations should go to the Administrator within the next month or two.

The President's Task Force on Environmental Health Risks and Safety Risks to Children

Established by Executive Orders 13045 and 13229, the President's Task Force on Environmental Health Risks and Safety Risks to Children is charged with recommending to the President Federal strategies for protecting children's environmental health and safety. The Task Force is Co-chaired by EPA Administrator Christine Todd Whitman and the Secretary of Health and Human Services, Governor Tommy Thompson. In October 2001, the Task Force principals met to identify priorities for the coming year. In addition to committing to implement the national lead and asthma strategies, the Task Force also recognized the unique problems and needs of the nation's schools by establishing a new working group, co-chaired by the Environmental Protection Agency, the

California Interagency Working Group on Indoor Air Quality

March 13, 2002 Meeting Notes

Department of Education, and the Department of Health and Human Services. The workgroup will likely have a strategy document drafted by late Summer.

Federal No Child Left Behind Act of 2001. The *No Child Left Behind Act of 2001* (Public Law 107-110), signed into law by the President on January 8, 2002, includes two important provisions that will directly impact school environmental health as well as the agenda and work of the Task Force Schools Workgroup. Section 5414 requires that the Secretary of Education conduct a study regarding the health and learning impacts of environmentally unhealthy public school buildings on students and teachers. The study must include the characteristics of public schools that contribute to unhealthy schools, health and learning impacts of environmental unhealthy public school buildings and recommendations to Congress on how to assist schools that are out of compliance with federal and state health and safety codes, and a cost estimate of bringing up the unhealthy schools to the minimum federal health and safety building standards. The report is to be completed 18 months after enactment. The Act also authorizes the Department of Education, in consultation with EPA and the Department of Energy, to award grants to state educational agencies to plan and prepare for healthy, high-performance school building projects that: 1) reduce energy use to 30% below that of a school construction plan as outlined in Chapter 8 of the 2000 International Energy Conservation Code; 2) meet Federal and state health and safety codes; and 3) support healthful, energy efficient, and environmentally sound practices.

Los Angeles Unified School District's Office of Environmental Health and Safety Website.

The Los Angeles Unified School District's Office of Environmental Health and Safety Website just went online. While they are still populating a number of the sections, it already has some great information. Over time, they will be adding a wide range of data and information. Of particular use are the most recent version of their *Safe School Inspection Guidebook*, the *Standard Emergency Procedures for Schools*, and *Safety Grams*. See <http://www.laschools.org/oehs/>

Environmental Livability and Smart Schools Symposia. The first of at least two *Environmental Livability and Smart Schools* Symposia in CA took place last Tuesday, December 5 in Los Angeles. The second symposium took place on February 26 in Sacramento and focused on the specifics of getting Joint Use/Schools as Centers of Community and High Performance School Design and Construction incentives in legislation. For more info: <http://www.nsbm.org/symposia/122001/slideshow.html>.

IAQ: Asthma and Allergens Course. Our University of Tulsa provided course in Fullerton, California January 22-23, 2002 provided excellent opportunities to reach new audiences, with people new to EPA training making up the vast majority (perhaps 80% or more) of the 220 people attending. There was significant participation by health providers and educators, for example physicians, Public Health Directors, HMO asthma educators, and community asthma workers. Schools were represented by school nurses and risk and maintenance managers and staff. Thanks to outreach by the California Apartment Association, there was attendance by a number of apartment management companies.

Ozone Generators. Recently, there has been publicity concerning the purchase of ozone generators by a California public school to combat mold. We recently learned from colleagues in Atlanta and Chicago that these devices have been marketed with the EPA Logo and/or an EPA registration number. Everyone should be aware that EPA does not endorse these devices and recommend against using them in occupied space. The Federal Trade Commission fined a major manufacturer, Alpine, for misleading advertising. If anyone should see such a device being sold with the EPA Logo or any EPA registration numbers, etc. please notify Shelly Rosenblum (rosenblum.shelly@epa.gov) at 415-947-4193.

If anyone should see such a device being used in homes, offices or schools, please explain to the user that ozone is ineffective in dealing with indoor air problems and should not be used in occupied spaces. Refer them to our website <http://www.epa.gov/iaq/pubs/ozonegen.html> for more information and as well as links to other agencies' statements on ozone generators.

WORKING GROUP COMMITTEES

Indoor Environmental Quality of Schools

-- Jed Waldman (JWaldman@dhs.ca.gov)

Informal Group on IEQ in School Studies. Study documents provided DHS, ARB, OEHHA, DTSC, CDE, DSA, CHPS, UCB, University of Texas-Austin, LBNL, U.S. EPA-Region IX are still available on-line at <http://www.cal-iaq.org/ISG/>.

Collaborative for High Performance Schools. The collaborative stakeholders recently met to discuss incorporation of CHPS as a non-profit organization and development of a CHPS vision document. CHPS documents are available at the web site: <http://www.chps.net/>.

Building Design and Operations

-- Leon Alevantis (LAlevantis@dhs.ca.gov)

Capitol Area East End Complex. An indoor air quality sampling plan is being developed by Clark/Gruen for Blocks 171-174. IAQ sampling on the 6th floor of Block 225 took place last month. More sampling is planned after furniture installation on the same floor the next few weeks. Sampling on all furnished floors will occur shortly before occupancy.

On January 22, 2002, DHS staff met with staff of UCB's Center for the Built Environment, CEC, and CIWMB to discuss their planned study of the occupant benefits of the underfloor air distribution system for Block 225.

The most recent quarterly report on the CAEEC to the Legislature's Joint Rules Committee can be found on-line at:

<http://www.legi.dgs.ca.gov/reports2002/East%20End%20Report--January%202002.pdf>

State Blueprint for Sustainable State Facilities... The State's Sustainable Building Task Force released their comprehensive plan to transform California's state-owned buildings into state-of-the-art facilities designed to save precious environmental resources and taxpayer dollars. The report, *Building Better Buildings: A Blueprint for Sustainable State Facilities (Blueprint)*, was released during the East End's *Topping Out Ceremony* on December 19, 2001, and recommends a 10-point plan to implement the sustainable building goal set forth by the Governor in Executive Order D-16-00. "This report is a powerful testament to the benefits of sustainable buildings, as well as partnerships among diverse agencies that come together to solve problems and produce outstanding results," said Aileen Adams, Secretary of the State and Consumer Services Agency and chair of the Task Force. "The interagency task force of more than 32 governmental departments represents the best in government -- a unique partnership, whose combined expertise in environmental, facilities, and fiscal matters -- is truly helping to improve our buildings and our environment."

The *Blueprint* emphasizes sustainable building strategies that include:

- Modifying the state's capital outlay policies and process to incorporate sustainable building goals;
- Incorporating integrated design, life cycle costing, building commissioning, and post occupancy evaluation processes into the state's capital outlay program;
- Developing cost-effective building performance standards to measure the effectiveness of sustainable building practices;
- Establishing a systematic reporting and review process to ensure that state building performance improves continuously;
- Developing exemplary projects and model sustainable buildings that demonstrate the effectiveness of sustainable building and operating processes; and
- Assisting state agencies in the development of sustainable building projects.

The Task Force continues to meet to discuss the various deliverables shown in this report, most recently on March 5, 2002, to assess progress towards implementation of their specified plan. The report can be found at: <http://www.ciwmb.ca.gov/GreenBuilding/TaskForce>.

FUTURE MEETINGS

Upcoming meetings of the CIWG-IAQ are scheduled as follows:

- June 12, 2002, Department of Health Services, 2151 Berkeley Way, Berkeley
- September 11, 2002, CalEPA Building, 10th & I St., Sacramento
- December 11, 2002, TBA
- March 12, 2003, TBA